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## Governing the Brain

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# **Governing the Brain**

## **The Emergence of a Neuro-chemical Social Imaginary**

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### **Abstract**

Developments in neuro-technologies in the pharma-medico sector give occasion to question the new ways in which the human mind and body are constructed and governed biopolitically (Rose 2013). The promises of technology and science may have lead the way to the development of a neurochemical social imaginary which is becoming increasingly dominant for our way to represent the diseases of the brain.

Despite the strength of this social imaginary, such neuro-technologies have also been followed by contestations in the public domain from the point of view of patients, relatives and citizens in general. The paper therefore explores the way in which knowledge representations of the neurochemical social imaginary take different forms in the public debate about technology. To what extent and how are these representations portrayed, debated, contested and challenged in the public domain?

Such public contestations may give a (perhaps limited) scope for a certain level of democratisation of an otherwise highly expert and science driven field of governance. One form of contestation takes place on the level of risk communication seen as a particular governmental practice as well as a language in which citizens can engage in debating and contesting the particular statements and hypotheses of the neurochemical social imaginary. Strydom (2008) amongst others sees risk communication exactly as a process of democratisation of scientific discourse. The question, however, is whether the risk discourse as a language of contestation is indeed rather limited?

Drawing on particular neuro-technological examples such as the medical treatments of ADHD in children and anti-depressant medicine the paper focuses on how the brain is governed and how practices of governmentality develop in the complex interplay between scientific discourse, technical promise and public ideas and images about health and mental illness.

## Introduction

Discussions in the public domain about medicine, mental illness and the related health technologies and treatments are reoccurring in the media landscape in Denmark, as they are in most other countries. While certain specific conditions apply, the case of Denmark can, in many ways, shed light on some general problems relating to knowledge representations in the psycho-pharmaceutical field. It is a country with a strong and reputable biomedical industry, it often seems to be the case that the industry position remains relatively unchallenged in many contexts. However, the Danish press does cover different positions in the debate, thereby, painting a varied picture of an important scientific controversy.

The paper examines the way in which knowledge representations of technologies relating to neurology and mental illness take different forms in the Danish public debate about illness, health technology and science. Popular representations of science play an important role in giving an insight into how new developments in science are transferred to the popular imagination. They also reveal areas of debate and contestation that arise when scientific findings are translated into the political field.

The paper draws on the concept of social imaginary to understand the way in which a scientific discourse of the brain is negotiated, debated and contested. In order to do this, I make use of Foucault's biopolitical approach and Rose's analysis of neurological science and medicine (Rose 2013; Rose 2007) in order to provide some tentative answers to the questions: Can we talk about a neuro-chemical social imaginary? What is the form it takes and how is its meaning negotiated? And what are the consequences for how the brain is governed? The paper argues that a neurochemical social imaginary can be traced in the public debate and that this has important consequences for the way that the human brain becomes an object for research as well as an object for governance.

The argument is developed through an analysis of the public reactions and the public debate of the increasing diagnosis of ADHD in children and the increasing use of medicine to treat the condition. ADHD as a case represents many of the central questions and points of disagreements of mental illness relating to the status and purpose of diagnosis and treatment, the contested causes of ADHD and of questions of inclusion and exclusion in relation to mental health. All these become relevant for the analysis of the neuro-chemical social imaginary. It is conducted as a qualitative study of the media coverage of ADHD in three Danish broadsheet newspapers. The newspapers *Politiken*, *Berlingske* and *Information* are chosen in order to cover the political spectrum in the Danish debate. *Politiken* and *Berlingske* are both fairly mainstream broadsheet newspapers where the former expresses an editorial line to the left of the centre while

Berlingske finds itself more to the right. *Information* is a more narrow newspaper which can be located further to the left than *Politiken*. While the study includes a complete sample of all the articles in the chosen newspapers based on a search of the word ADHD, the paper only quotes<sup>1</sup> a number of these which are of special relevance to the paper's focus on contestations over diagnosis and treatment.

### **The emergence of a neuro-chemical social imaginay**

In trying to establish some of the ways in which the body and mind are governed biopolitically, the case for the development of a neuro-chemical social imaginary is explored. Some studies of the social, ethical and indeed political aspects of mental health call for a much-needed debate of the assumptions inherent in the diagnosis of different mental diseases and for the justification for the use of drug-treatment. In the case of ADHD, for instance, this is particularly pertinent in the light of there being 'no clear and indisputable scientific rationale for the growing rates of ADHD diagnosis and treatment in children' (Singh 2008: 960). For Singh a social analysis can contribute to science in order to ensure standardization and consistency in diagnosis and treatment thereby illuminating us on at least some of the social causes of over- and under-diagnosis (Singh 2008: 960f). While no one can deny the practical need for consistency in diagnosis, such a focus neglects an analysis of how these very assumptions of diagnosis and mental health – social as well as scientific - develop as frames of meaning.

The social imaginary, for Taylor, relates to how ordinary people imagine the world and their social surroundings. 'The social imaginary is that common understanding that makes possible common practices and a widely shared sense of legitimacy' (Taylor 2004: 23). For Laclau myths provide a particular reading of a situation and a given myth may aspire to or come to signify the very form of fullness and thus become a social imaginary (Laclau 1990: 63). The subject becomes embedded in a given social imaginary and it will seem like the only possible horizon of meaning (Taylor 2004: 17).

Rose's analysis of modern biopolitics can be seen as an exploration of a changing social imaginary. 19<sup>th</sup> Century understandings of the biomedical body as a functional organism and as a living system subjected to the clinical gaze has been challenged as a horizon of meaning. It has, at least partly, been replaced with a new perception of life seen in terms of a molecularized body. This development is intrinsically linked to the developments of new techniques in life sciences: from 19<sup>th</sup> Century dissections and its influence on anatomical knowledge to the 20<sup>th</sup> Century discovery of the DNA structures as well as important discoveries within the pharma-medical arena. The dominating metaphor for

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<sup>1</sup> All quotes are translated from Danish by the author.

life went from being the living biological organism to being a linguistic system consisting of relations of meaning. Life and bodies could be understood through codes, information, messages etc. as a system of communication (Rose 2007: 44). This is certainly also true of brain processes that are increasingly understood in terms of a very complex interplay between genetics, chemical processes and electric and sensory stimuli, to mention some of the relevant factors.

For Foucault biopolitics is a control mechanism used on the population (Foucault 1997: 242) or regulation and steering of life processes (Lemke 2010: 3). A biopolitical approach to mental illness privileges neither politics nor life in the justification of treatment and diagnosis but recognises the complex interplay and the instable borders that exists between politics and life as it occurs in the '...practices of correction, exclusion, normalization, disciplining, therapeutics and optimization' (Lemke 2010: 4f). Biopolitics is therefore far from a centralised and unified discourse of governance but consists also of:

... strategies involving contestations over the ways in which human vitality, morbidity, and mortality should be problematized, over the desirable level and form of the interventions required, over the knowledge, regime of authority, and practices of intervention that are desirable, legitimate, and efficacious (Rose 2007: 54)

Biopolitics thus becomes a matter of political contestations over life and the right to one's life and one's body (Foucault 1978: 145). Such matters are no less relevant when scrutinising biomedical technologies and understandings of the brain in the emergence of a medico-scientific discursive order.

For Foucault, however, biopower can hardly be understood without reference to how the governing techniques and practices interact with technologies of the self. Central to these are the way in which the subject is enabled, through expert and institutional discourse, to discover the truth about him-/herself (Foucault 1978; Dreyfus and Rabinow 1983: 175). Rose sees a movement from the truth about the self being found in a psychological therapeutic gaze of self-discovery of one's roots and origins as a cause for distress and mental illness. This discursive order is, however, increasingly being replaced by a genetic therapeutic truth regime which seems to provide one of the most promising claims to discovery of the truth of the self and the origins of disorders (Rose 2013: 227). The genetic, and also the chemical, scientific regime also increasingly seeks to deliver on its promises of treatments inherent in new health technologies, both pharmaceutical and genetic.

## Diagnosis in question: ADHD and scientific disagreement

The Danish public debate on ADHD evolves around the status and the implications of diagnosis in mental conditions. The fact that ADHD is, mostly, diagnosed in children makes the topic particularly emotional and problematic. Qualitative coding shows that the themes in the newspaper debate evolve around three topics all relevant to the overall question of diagnosis: First of all the question of disagreement, both scientifically and more generally, about the status of diagnosis. Equally important is the complex relationship between inclusion and exclusion. Finally, the debate also raises the controversy over the causes and thus the treatments to be employed.

The question of over-medication is at the heart of the debate over diagnosis and treatment of mental illness. Critical voices from the political and scientific communities express concern over both the increase in diagnosis on a national level and the large discrepancies between how much medicine is prescribed in different areas. The different cases of reported diagnosis increases show a slight variance, however, they show a clear indication of a problem. The concern is, for instance, expressed by the Minister for Health Astrid Kragh: 'I will encourage doctors to think twice before reaching for the prescription pad' (Berlingske 15-04-2013). However, this position does not stand alone. It is countered by a call for a more complex or positive view of diagnosis. Members of the psychiatric community express both highly critical and pro-diagnosis opinions in the media.

Figure 1: Statistics used as documentation in the media for level of medication (to be expanded*)		
Figure: number on ADHD	Source quoted	Reference
38.000 in 2012 Increase of 3.000 since 2011	SSI: State Research and Development Institute	Berlingske 15-04-2013
41.000 in 2012 2.100 in 2000	Psychiatrist Henrik Day Poulsen (author), Ekstra Bladet <sup>2</sup>	Berlingske 19-04-2013

Following a documentary called *Denmark on Pills* showed on the public service TV station *Danmarks Radio* (DR) on the 17<sup>th</sup> of April 2013, the last of a three part series, all newspapers had special focus on the issue of over-diagnosis and over-medication. There are many examples of critical scientists and medical practitioners expressing a critical view towards the current regime of diagnosis. One of these is psychiatrist Asker Stig Nielsen who considers this development 'insane': 'ADHD has become a fashion phenomenon, and I feel that both patients and doctors can be much more critical' (Berlingske 15-05-2013). Likewise in an international context, Professor of medicine at Yale, William Graf when presented with the fact that 6,4 million American boys have

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<sup>2</sup> Danish tabloid newspaper

been diagnosed with ADHD: 'The numbers are astronomical. I am astonished' (Politiken 02-04-2013). These comments support the highly critical position, also brought forward in the DR documentary, that psycho-pharmacology has a particular problem with over-medication which is not based on sound scientific evidence but rather has its grounds in what could be expressed in the following way: 'Aggressive marketing from pharmaceutical companies can lead to false epidemics' (Information 17-05-2013). What the last comment indicates is, of course, that diagnoses are not made on a sound scientific grounding but directly or indirectly for commercial reasons.

In a call for a scientifically founded debate about medication, psychiatrist Henrik Day Poulsen writes a comment on the very critical reception of his critical book: *Medicines that kill*. The book has, according to Poulsen, resulted in several colleagues withdrawing from planned research collaboration. He finds it problematic also from a democratic perspective that doctors, the pharmaceutical industry and journalists are reluctant to participate in the debate and engage with what appears to be false and true statements on pills (Berlingske 19-04-2013). This is also, indirectly, a call for more critical attitudes to be voiced from the scientific community in the public debate.

However, not all scientists are equally critical of the diagnosis system. Ole Mors, professor at Aarhus University Hospital and chairman of the Danish Psychiatric Association's diagnosis committee, states a case for the diagnostic system and for the benefit of establishing a scientifically based and standardised system for classification and diagnosis. He also points out that: 'The psychiatric units do not over-diagnose in Denmark (...) People who come to us (...) are really ill. But over-diagnosis may occur at the GP surgeries where there may be a different level of interest and training in mental illness. The problem lies with light and moderate conditions.' (Information 17-05-2013). He thus argues for the scientific foundation of diagnosis and for making decisions based on research and progress in knowledge.

The Danish Health and Medicines Authority are working on national clinical guidelines to ensure more uniform standards of treatment (Berlingske 15-04-2013). These will very likely be based on the coming US National Institute of Mental Health's publication of a new Diagnostic and Statistical Manual, the DSM 5. The US DSM is important because it sets the standard internationally and influences e.g. the WHO's classification of mental conditions. In an interview professor in Psychiatry Allen Frances, who was the lead developer of the previous DSM 4, expresses concern with the tendency to what he calls 'diagnosis inflation'. This is particularly important due to the high risk of mortal side-effects in psycho-pharmaceuticals. 'DSM 5 will exacerbate diagnostic inflation by introducing new untested diagnoses and reducing the boundaries for the existing ones' (Information 17-05-2013). The number of diagnoses is expected to increase from 365 in

1994 (DSM 4) to 400 in DSM 5. According to *Information*, some of the new diagnoses for children are expected to be DMDD, Disruptive Mood Dysregulation Disorder, Binge Eating Disorder and Internet Addiction. ADHD itself is a relatively new condition that took over as classification unit from Damp and others (Singh 2008). Recent debate indicates that Asperger's syndrome risks disappearing to be categorised as part of a broader diagnosis. The renaming and re-categorising are important elements in managing and governing the brain as it provides the most important basis for diagnosis and treatment.

## **Causes and treatments**

Technological promise is a central prerequisite to the development of a neuro-chemical social imaginary. Two developments are central in that respect: The brain is increasingly seen as being central to understanding the human self. At the same time, in the light of new techniques for measuring and viewing brain activity, the visions of the brain itself are changing. This knowledge transformation, happening gradually in line with developments in research, starts within the scientific arena but spreads to the wider public sphere. The brain is seen increasingly as a neuro-molecular unit which can be visualised with new techniques such as fMRI<sup>3</sup> providing the foundation for the promise of technological progress. Rather than a fixed unit the brain is increasingly understood in terms of plasticity and adaptability (Rose 2013).

Two examples of technological optimism are reported in the examined material. First of all and of a more general technological nature, a new research centre, Dandrite, at Aarhus University and the European Molecular Biology Laboratory will specialise in molecular neurology. In laypersons terms this is described as 'how brain cells fundamentally communicate through chemical and electric processes. This will influence almost everything that goes on in the brain and be of importance to a long string of neurological illnesses' (Politiken 01-03-2013). The second technological promise has to do with optogenetics which combines optics and genetics to control neurons in order to stimulate the brain. As described in the article, the technique promises: 'a switch on/off button in the brain' working through light sensitivity and genetics (Berlingske 12-03-2013). This research has been awarded with a Brain Research Prize. This is also an example of the increasing importance of interdisciplinarity in neuro-science. Technological progress, to a large extent, relies on the floating borders between disciplines such as science, chemistry, biology and engineering.

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<sup>3</sup> Functional Magnetic Resonance Imaging



The causes of ADHD are still very unclear. They may be genetic, cognitive, evolutionary, environmental or social – or they may likely be a combination of some or all of these factors. Gaining further knowledge of the causes of ADHD is, of course, central to the knowledge of treatments. About the scientific uncertainty professor Ole Mors says, quoting his colleague professor Albert Gjedde: 'It is unclear what concrete knowledge about the condition of the brain the increasingly numerous diagnoses in the DSM rest on. At the same time, the pharmaceutical industry is running their heads against the wall as the lack of knowledge about the causes for the symptoms makes it difficult to conduct purposeful research' (Information 17-05-2013).

The possible multiplicity of causes for ADHD invoke the classical discussion of the interplay between nature and nurture: One comment, from a layperson, who is a mum of four and a member of the Association for Young Families, draws on both the complexity, uncertainty and the nature/nurture debate. She is concerned about a possible connection between levels of cortisol related to stress in children's blood when they start nursery. Some researchers see this as an indication of a connection between permanently high levels of cortisol and psychological conditions such as ADHD (Information 02-03-2013). The author speaks as an advocate for a later nursery start for young children and establishes a link between environmental, social and neurochemical factors. Her argument may appear to be pro-nurture but due to the complexity evoked cortisol may also be seen as a 'natural' component that can be affected by other factors such as genetic disposition (this is, however, only expressed indirectly in the comment).

In contrast to the causal complexity stands biochemist Lone Frank, author of the book *My Beautiful Genome. Exposing our Genetic Future, One Quirk at a Time*. In this book she expresses a large degree of genetic and technological determinism when she examines her own genetic disposition to, for instance, depression and other mental conditions and is on the search for the 'new biological man' (Frank 2011). She has even a few years ago gone as far as to speak in favour of EPO and Ritalin as expanding our concept of normality and thus creating a new normal standard for how the body can perform (Information 17-06-2010). While Frank may be unique in the extremity of technical determinism, her position can be traced in many other approaches to ADHD, both amongst experts searching for new treatments and relatives/patients looking for answers when they seek to make sense of a complex condition. Also important is the fact that the technological determinism often tends to provide the basis for technique of governance and governmentality within the health care system. This way to see mental conditions has possible implications for how the self is perceived and how ADHD is made sense of amongst parents, relatives, schools, health care professionals and other implicated actors. Rose calls for caution in reductionism and that laboratory findings do not translate easily to real brains *in situ* (Rose 2013: 228f).

The debate also shows the relevance of Rose's argument that a paradigm shift in mental illness has shifted focus from psychological explanations to neurological explanations. This is exemplified in the following argument from professor Ole Mors: 'Previously, anxiety, for instance, was diagnosed exclusively on the basis of Freud's theories: When a neurosis occurred, it was due to a repression and therefore, there were symptoms. But no one knew if it was the right interpretation in each singular case. That is why we have ended up with a classification based on what everyone, also psychologist, can observe: the observable symptoms and behaviour. I think that is more valid than hypothetical theories about presumed causes' (Information 17-05-2013). However, he also admits that neurological research is still short of answers.

It is also clear from the debate, that the neurochemical social imaginary meets some resistance. It is also not surprising that representatives from the field of psychology take a different approach than Ole Mors. Psychologist Allan Holmgren writes: 'But the psychiatric 'science' has highhandedly taken the power of definition over ordinary people's problems, lives and identities through the diagnostic system, which does not tell a meaningful story about the particular persons particular life' (Politiken 29-04-2013). The DR documentary *Denmark on Pills* also contributes to this debate. This is done, for instance, in the case of the boy, Rasmus, who is being treated for ADHD with Ritalin. During the programme he participates in family therapy. In the therapist's opinion medication would not have been the obvious answer and he provided techniques for better interaction patterns amongst the family members (DR 17-04-2013). On the other hand, psychiatrist Per Hove Thomsen argues for medication being the only form of treatment for ADHD that is evidence based and therefore the only treatment that has documented effect (DR 17-04-2013).

### **Conclusion: Governing the brain**

For Foucault the state is absolutely central in the governing process in biopolitics. In several cases reported in the newspapers, the state apparatus is clearly involved in administering and regulating life-processes and extended this regulation to the subjects' bodies (Foucault 1978). This is particularly the case when medication is promoted, or indeed close to forced upon families and children, and diagnosis is thus used as a technique of governance. This is the case when the

Diagnosis as a tool for governance (Politiken, art. 28): The County Administration demands a diagnosis before they will consider giving support to parents (Politiken 25-05-2013). Likewise, the parents of Mikkel, the second child used as a case in the DR documentary *Denmark on Pills*, refused to medicate their child and were as a result close

to being declared unfit for parenting by the social services (DR 17-04-2013). This example shows the importance of resistance and how the individual acts on the basis of negotiations of meaning in a complex situation in the public sphere. The parents in question ended up involving the media and used it as a political tool to maintain their reluctance towards medication as a form of treatment. Ultimately, biopolitics becomes a locus for contestations over knowledge regimes and their authorities as well as which intervention is required in questions ultimately of vitality, mortality and morbidity (Rose 2007). It certainly proved to be a case of the right to one's body (or one's child's body) and to subject or not subject it to a particular form of treatment.

Rose argues for not overstating the role of the state in promoting such biopolitical strategies (Rose 2007). For him modern biopolitics increasingly takes the discursive form of a liberal discipline in which the object of the strategies ceases to be the general population and becomes the individual with his/her choices and responsibilities for their own health within the wider context of the roles played by state institutions, corporations, and other knowledge-creating organisations. However, I do not think that this particular individualistic and liberalistic expression of the neurochemical social imaginary is excluded in Foucault's concept of governmentality which does indeed include techniques of self-governance. The free choice – of hospital, treatment form etc – can be seen in this light. However, eschewing any form of determinism in diagnosis and treatment, it seems likely that the state exercises these new forms of pastoral power in terms of the juxtaposition between the way in which the person is defined in terms of 'contemporary understandings of the possibilities and limits of our corporality', while also drawing on an individuality 'opened up by choice, prudence, and responsibility, to experimentation, to contestation' (Rose 2007: 76).

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